AMERICAN CHEMICAL SOCIETY.

The regular meeting of the American Chemical Society was held Friday evening, May 6, Vice-President Leeds in the chair. Messrs. J. G. Mattison, Theo. Tonnelé, and Dr. Otto Grote were duly elected members, and Messrs. A. H. Van Sinderin and C. P. Sawyer as associate members. Mr. A. F. Hallock was proposed for election. The first paper on the programme was "On a Slight Modification of the Wilkinson Gas Eudiometer," by Mr. James H. Stebbins, Jr., S. B. Having found considerable difficulty in the manipulation of the instrument as described by Dr. Wilkinson, Mr. Stebbins succeeded in overcoming his objections by bringing the stopcock nearer to the Eudiometer itself. It is very difficult, in fact impossible, to properly explain the improvement without illustrations. At the conclusion of Mr. Stebbins' paper, Dr. C. A. Doremus very thoroughly explained the method of procedure used by Dr. Wilkinson in his working of the Eudiometer. This made the matter clearer, still the improvement by Mr. Stebbins was thought desirable.

The next paper* was by Dr. T. O'C. Sloane, "Note on the Purification of Baric Sulphate." The author finds in order to obtain a precipitate of barium sulphate that will not run through the filter, a few rules must be observed. These he gave as follows: 1st. The solution must be barely acid. This end he secures by using cochineal, finding by its use that the neutralization can be more expeditiously and exactly performed than with litmus. 2d. The precipitant is added when the solution is almost up to a boil and kept at that temperature for some minutes. By following these two suggestions a heavy precipitate with a perfectly clear supernatent liquid will be obtained. In case any iron salts have been carried down with the barium sulphate, the precipitate is to be treated first with hydrochloric acid and secondly with sulphuric acid, but this process is open to some objections. It is therefore best to fuse the precipitate with sodium carbonate and a very little sodium nitrate and redetermine the sulphur. As an improvement, Dr. Sloane finds the following method quick and reliable: The sulphur is precipitated in the conventional manner with the previous mentioned precautions carefully observed. The solution is then decanted to the last possible drop through a filter paper; 5 or 10 c. c. of conc. hydrochloric acid are then added and the beaker held in the hand over a hot plate until the acid is brought to a full boil. It is allowed to continue so for a few minutes, then cooled and diluted. The liquid neutralized with cochineal solution, re-acidified and poured into the filter. By this manner a white and clean precipitate was obtained. Dr. Sloane immediately followed with a description of a new "Qualitative Test for Carbon Disulphide and Carbon Dioxide in Coal Gas." A piece of caustic potash, a few m. m. long, is added to ten or twenty c. c. of alcohol, into which a piece of potassium carbonate has been added. The alcoholic solution of potash is placed in a suitable absorption tube and a cubic foot or more of gas passed through it. It is then removed from the absorption apparatus and poured into a test tube. If the gas contains any carbon dioxide, an oily looking layer, nearly colorless, of a solution of potassium carbonate will underlay the alcohol, which latter will have acquired a reddish color. The alcoholic solution, which, if any carbon bisulphide be present, will contain potassium xanthate, is boiled and tested for hydrogen sulphide. Another method, is to add an excess of a copper salt, filter out the precipitated copper compounds and pour ammonia through the filter paper, when a highly characteristic yellow precipitate of copper xanthate will remain behind.

The fourth paper was by A. R. Leeds, Ph. D. Its title was "Upon the Direct Conversion of the Aromatic Amides into their corresponding Azo-compounds."

This paper was a sketch of the recent work which Dr. Leeds has been prosecuting in his laboratory at the Steven's Institute. It consisted, as described in the title, of the details incidental to the conversion of the different aromatic amides into the corresponding azo-compounds with the peculiarities of each commented on. Many of the hydroxylated compounds were also operated on by Dr. Leeds.

Mr. A. A. Julien followed with a very interesting paper "On the Chemical Contents of the Fluid Cavities of Minerals." Mr. Julien is the well known lithologist of the School of Mines in this city, and has a higher reputation in this specialty than almost any other scientist in this country.

He first gave a general outline of the history of the subject. It is only comparatively recent that any attention has been paid to these cavities, which are very minute in size and generally of a rounded shape, though sometimes following the outlines of a crystal, that is to say, the cavity is of the same shape as a crystal of the substance in which the cavity occurs. New York is, for many reasons, the best place to study this subject; for instance, a greater number of specimens find their way to this city. Among the substances found in these cavities are: water, carbon dioxide, nitrogen, sulphur dioxide, ammonia, fluorine, chlorine, oxygen, hydrogen disulphide, and rarely bituminous and light hydro-carbons.

Herkimer, N. Y., is a locality where the latter are frequently found.

Carbon dioxide is, however, the most interesting of these substances to the chemist, and it is also the one most frequently met with. It is found in some fifteen localities throughout the United States. One locality is known in New York State. These cavities are generally found in granites, granito-porphyries, hornblendic and other gneisses and in smoky quartz. The most characteristic feature of the carbon dioxide in the cavities is its remarkable expansive quality—so great that in touching it the warmth of the hand will completely vaporize the liquid compound. Mr. Julien has devoted special attention to the determination of the temperature at which the liquid expands and for that purpose has devised a form of apparatus to be used in such estimations. The piece of mineral containing the cavity is mounted on a microscopic slide and placed in the new apparatus, which consists of a long metallic box, with a small tube on the surface, to which a rubber tube is attached. The whole apparatus is placed in the microscope. On blowing into the rubber tube sufficient heat is obtained to cause the expansion of the bubble of carbon dioxide. Readings are made of the temperature at which the bubble disappears and also of the temperature at which the bubble reappears. Mr. Julien's results agree within two tenths of a degree Fahrenheit.

Thus by the ordinary method (Fuessi's) two results, 80.1 and 79.5 were obtained, while with the improvement six results were obtained as follows: 79.6, 79.4, 79.6, 79.5, 79.5 and 79.6. Mr. Julien also gave a very interesting description of "Reticular Fluid Cavity" in Topaz from Brazil, whose bubble was the largest ever discovered, being 2.28 m. m. in length. He also referred to the spontaneous motion observed in the bubbles and to the general bearing of the entire subject of the gensis and formation of rocks. M. B.

* I would acknowledge my indebtedness to Dr. Sloane for his kindness in lending me his original MSS.—M. B.

M. DUCHEMIN, the inventor of the compass with circular magnets, now adopted in the French navy, has lately devised, for correction of compasses, a system of magnetic compensators, in which magnetic bars of annular or circular form are used in place of the straight ones. These have the advantage of insuring much greater magnetic stability than straight bars, especially when lightning occurs in the neighborhood of the ship.